Задание:

1. Подготовьте рабочее окружение в соответствии с типом вашей операционной системы
   - Установите Docker
   - Выполните базовую настройку

```
kvace@yanchik MINGW64 ~
$ docker --version
Docker version 25.0.3, build 4debf41
```

2. Изучите простейшие консольные команды и возможности Docker Desktop (см. лекцию), создать собственный контейнер docker/getting-started, открыть в браузере и изучить tutorial

```
Common Commands:
  run       Create and run a new container from an image
  exec      Execute a command in a running container
  ps        List containers
  build     Build an image from a Dockerfile
  pull      Download an image from a registry
  push      Upload an image to a registry
  images    List images
  login     Log in to a registry
  logout    Log out from a registry
  search    Search Docker Hub for images
  version   Show the Docker version information
  info      Display system-wide information
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps
CONTAINER ID   IMAGE      COMMAND       CREATED    STATUS      PORTS      NAMES
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -a
CONTAINER ID   IMAGE                COMMAND                CREATED      STATUS                PORTS      NAMES
23227f4cb05f   nginx:1.23           "/docker-entrypoint.…" 2 days ago   Exited (0) 2 days ago            fervent_cannon
58f6cb5ffd01   nginx:1.23           "/docker-entrypoint.…" 2 days ago   Exited (0) 2 days ago            musing_nash
21c976bc6a59   kcoursedocker/task-2.9 "python3 input.py"   2 days ago   Exited (0) 2 days ago            upbeat_carver
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -q
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -qa
23227f4cb05f
58f6cb5ffd01
21c976bc6a59
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker images
REPOSITORY              TAG      IMAGE ID       CREATED        SIZE
nginx                   latest   92b11f67642b   4 weeks ago    187MB
nginx                   1.23     a7be6198544f   9 months ago   142MB
kcoursedocker/task-2.9  latest   6975591fdaef   19 months ago  48.7MB
kcoursedocker/task-1.1  latest   a7c163a4b2cd   19 months ago  72.8MB
yanchik@yanchik:/mnt/c/Users/kvace$ docker image ls
REPOSITORY              TAG      IMAGE ID       CREATED        SIZE
nginx                   latest   92b11f67642b   4 weeks ago    187MB
nginx                   1.23     a7be6198544f   9 months ago   142MB
kcoursedocker/task-2.9  latest   6975591fdaef   19 months ago  48.7MB
kcoursedocker/task-1.1  latest   a7c163a4b2cd   19 months ago  72.8MB
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker history 92b11f67642b
IMAGE           CREATED          CREATED BY                                        SIZE      COMMENT
92b11f67642b    4 weeks ago      CMD ["nginx" "-g" "daemon off;"]                  0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      STOPSIGNAL SIGQUIT                                 0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      EXPOSE map[80/tcp:{}]                             0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      ENTRYPOINT ["/docker-entrypoint.sh"]              0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      COPY 30-tune-worker-processes.sh /docker-ent…     4.62kB    buildkit.dockerfile.v0
<missing>       4 weeks ago      COPY 20-envsubst-on-templates.sh /docker-ent…     3.02kB    buildkit.dockerfile.v0
<missing>       4 weeks ago      COPY 15-local-resolvers.envsh /docker-entryp…     336B      buildkit.dockerfile.v0
<missing>       4 weeks ago      COPY 10-listen-on-ipv6-by-default.sh /docker…     2.12kB    buildkit.dockerfile.v0
<missing>       4 weeks ago      COPY docker-entrypoint.sh / # buildkit            1.62kB    buildkit.dockerfile.v0
<missing>       4 weeks ago      RUN /bin/sh -c set -x    && groupadd --syst…      112MB     buildkit.dockerfile.v0
<missing>       4 weeks ago      ENV PKG_RELEASE=1~bookworm                        0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      ENV NJS_VERSION=0.8.3                             0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      ENV NGINX_VERSION=1.25.4                          0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      LABEL maintainer=NGINX Docker Maintainers <d…     0B        buildkit.dockerfile.v0
<missing>       4 weeks ago      /bin/sh -c #(nop)  CMD ["bash"]                   0B
<missing>       4 weeks ago      /bin/sh -c #(nop) ADD file:b86ae1c7ca3586d8f…     74.8MB
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker run --rm -it kcoursedocker/task-1.1
Welcome to the club
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker run -it -d nginx:1.23
ef201e8256532023f369b02de6f58698bb322d4a65448bd030cab19b042f28ea
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -a
CONTAINER ID    IMAGE                    COMMAND                 CREATED         STATUS                 PORTS       NAMES
ef201e825653    nginx:1.23               "/docker-entrypoint.…"  5 seconds ago   Up 5 seconds           80/tcp      happy_panini
23227f4cb05f    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago              fervent_cannon
58f6cb5ffd01    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago              musing_nash
21c976bc6a59    kcoursedocker/task-2.9   "python3 input.py"      2 days ago      Exited (0) 2 days ago              upbeat_carver
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker stop happy_panini
happy_panini
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -a
CONTAINER ID    IMAGE                    COMMAND                 CREATED            STATUS                   PORTS       NAMES
ef201e825653    nginx:1.23               "/docker-entrypoint.…"  About a minute ago Exited (0) 2 seconds ago             happy_panini
23227f4cb05f    nginx:1.23               "/docker-entrypoint.…"  2 days ago         Exited (0) 2 days ago                fervent_cannon
58f6cb5ffd01    nginx:1.23               "/docker-entrypoint.…"  2 days ago         Exited (0) 2 days ago                musing_nash
21c976bc6a59    kcoursedocker/task-2.9   "python3 input.py"      2 days ago         Exited (0) 2 days ago                upbeat_carver
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker run -d nginx:1.23
c65e8fec63c6c86e83b0199ad6e831eefc318825f7f8d61e20b87a86d227319c
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -a
CONTAINER ID    IMAGE                    COMMAND                 CREATED         STATUS                       PORTS       NAMES
c65e8fec63c6    nginx:1.23               "/docker-entrypoint.…"  1 second ago    Up 1 second                  80/tcp      wizardly_lamarr
ef201e825653    nginx:1.23               "/docker-entrypoint.…"  2 minutes ago   Exited (0) About a minute ago            happy_panini
23227f4cb05f    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago                    fervent_cannon
58f6cb5ffd01    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago                    musing_nash
21c976bc6a59    kcoursedocker/task-2.9   "python3 input.py"      2 days ago      Exited (0) 2 days ago                    upbeat_carver
yanchik@yanchik:/mnt/c/Users/kvace$ docker exec -it wizardly_lamarr bash
root@c65e8fec63c6:/# exit
exit
```
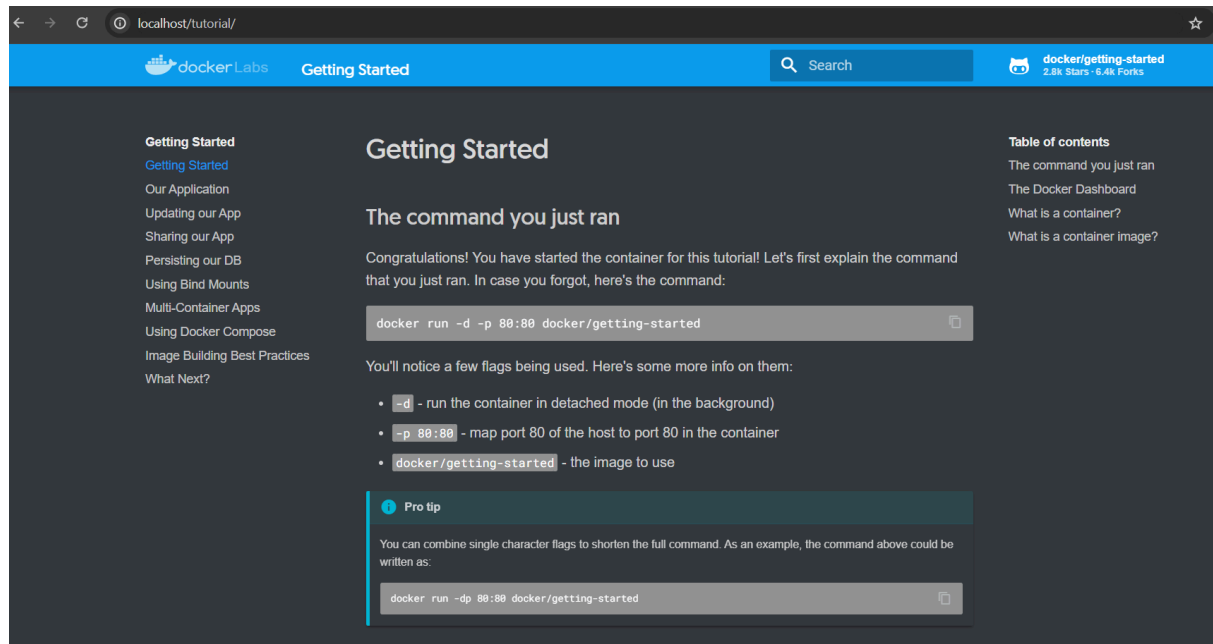
```
yanchik@yanchik:/mnt/c/Users/kvace$ docker stop $(docker ps -q)
c65e8fec63c6
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -a
CONTAINER ID    IMAGE                    COMMAND                 CREATED         STATUS                   PORTS       NAMES
c65e8fec63c6    nginx:1.23               "/docker-entrypoint.…"  2 minutes ago   Exited (0) 4 seconds ago             wizardly_lamarr
ef201e825653    nginx:1.23               "/docker-entrypoint.…"  4 minutes ago   Exited (0) 3 minutes ago             happy_panini
23227f4cb05f    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago                fervent_cannon
58f6cb5ffd01    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago                musing_nash
21c976bc6a59    kcoursedocker/task-2.9   "python3 input.py"      2 days ago      Exited (0) 2 days ago                upbeat_carver
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker run -d -p 80:80 docker/getting-started
Unable to find image 'docker/getting-started:latest' locally
latest: Pulling from docker/getting-started
c158987b0551: Pull complete
1e35f6679fab: Pull complete
cb9626c74200: Pull complete
b6334b6ace34: Pull complete
f1d1c9928c82: Pull complete
9b6f639ec6ea: Pull complete
ee68d3549ec8: Pull complete
33e0cbbb4673: Pull complete
4f7e34c2de10: Pull complete
Digest: sha256:d79336f4812b6547a53e735480dde67f8f8f7071b414fbd9297609ffb989abc1
Status: Downloaded newer image for docker/getting-started:latest
1c91f04e133a7f0db987c30abc1d8a10c3a1922c9446eb2ddb14b676eb670e7c
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -a
CONTAINER ID    IMAGE                    COMMAND                 CREATED         STATUS                   PORTS                 NAMES
1c91f04e133a    docker/getting-started   "/docker-entrypoint.…"  22 seconds ago  Up 20 seconds            0.0.0.0:80->80/tcp    beautiful_feistel
c65e8fec63c6    nginx:1.23               "/docker-entrypoint.…"  5 minutes ago   Exited (0) 3 minutes ago                       wizardly_lamarr
ef201e825653    nginx:1.23               "/docker-entrypoint.…"  7 minutes ago   Exited (0) 6 minutes ago                       happy_panini
23227f4cb05f    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago                          fervent_cannon
58f6cb5ffd01    nginx:1.23               "/docker-entrypoint.…"  2 days ago      Exited (0) 2 days ago                          musing_nash
21c976bc6a59    kcoursedocker/task-2.9   "python3 input.py"      2 days ago      Exited (0) 2 days ago                          upbeat_carver
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker rm fervent_cannon
fervent_cannon
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps -a
CONTAINER ID   IMAGE                     COMMAND                  CREATED         STATUS                    PORTS     NAMES
1c91f04e133a   docker/getting-started    "/docker-entrypoint.…"   3 minutes ago   Exited (0) About a minute ago        beautiful_feistel
c65e8fec63c6   nginx:1.23                "/docker-entrypoint.…"   8 minutes ago   Exited (0) 6 minutes ago             wizardly_lamarr
ef201e825653   nginx:1.23                "/docker-entrypoint.…"   10 minutes ago  Exited (0) 9 minutes ago             happy_panini
58f6cb5ffd01   nginx:1.23                "/docker-entrypoint.…"   2 days ago      Exited (0) 2 days ago                musing_nash
21c976bc6a59   kcoursedocker/task-2.9    "python3 input.py"       2 days ago      Exited (0) 2 days ago                upbeat_carver
```

3. Создайте docker image, который запускает скрипт с использованием функций из https://github.com/smartiqaorg/geometric_lib.
    a. Данные необходимые для работы скрипта передайте любым удобным способом (например: конфиг файл через docker volume, переменные окружения, перенаправление ввода). Изучите простейшие консольные команды для работы с docker(см. лекцию). Зарегистрируйтесь на DockerHub и выберите необходимые для проекта образы
    b. Создать Dockerfile для реализации сборки собственных Docker образов

```
M↓ README.md        🐍 main.py        🐳 Dockerfile ×      🐍 square.py

1 ⫸    FROM python:3.12.2
2
3       WORKDIR /app
4
5       COPY circle.py /app
6       COPY square.py /app
7       COPY main.py /app
8
9       ENV LENGTH="5"
10
11      CMD ["python", "main.py"]
```

```
PS D:\geometric_lib> docker build -t my_image:1 .
[+] Building 11.4s (10/10) FINISHED
 => [internal] load build definition from Dockerfile
```

```
PS D:\geometric_lib> docker images
REPOSITORY          TAG        IMAGE ID       CREATED         SIZE
my_image            1          c1ebaef31872   4 minutes ago   1.02GB
```

```
PS D:\geometric_lib> docker run -it my_image:1
Area of square is: 25
Perimeter of square is: 20
Area of circle is: 78.53981633974483
Perimeter of circle is: 31.41592653589793
```

4. Скачать любой доступный проект с GitHub с произвольным стеком технологий (пример – см. индивидуальное задание) или использовать свой, ранее разработанный. Создать для него необходимый контейнер, используя Docker Compose для управления многоконтейнерными приложениями. Запустить проект в контейнере.(Примеры Images: https://hub.docker.com/_/phpmyadmin, https://hub.docker.com/_/mysql, https://hub.docker.com/_/postgres)

```yaml
docker-compose.yml ×

version: "3.7"

services:
  wordpress:
    image: wordpress:6.0.0-php8.0
    restart: always
    ports:
      - "3000:80"
    volumes:
      - ./dist/wp:/var/www/html
    networks:
      - wordpress-network
    links:
      - db
    environment:
      WORDPRESS_DB_HOST: db
      WORDPRESS_DB_USER: wp_db_user
      WORDPRESS_DB_PASSWORD: wp_db_pass
      WORDPRESS_DB_NAME: wp_db
      WORDPRESS_DEBUG: 1

  db:
    image: mysql:5.7
    platform: linux/amd64
    restart: always
    environment:
      MYSQL_DATABASE: wp_db
      MYSQL_USER: wp_db_user
```

```
29              MYSQL_PASSWORD: wp_db_pass
30              MYSQL_ROOT_PASSWORD: 1234
31      networks:
32          - wordpress-network
33      volumes:
34          - ./dist/host/.db:/var/lib/mysql
35
36  networks:
37      wordpress-network:
38
```
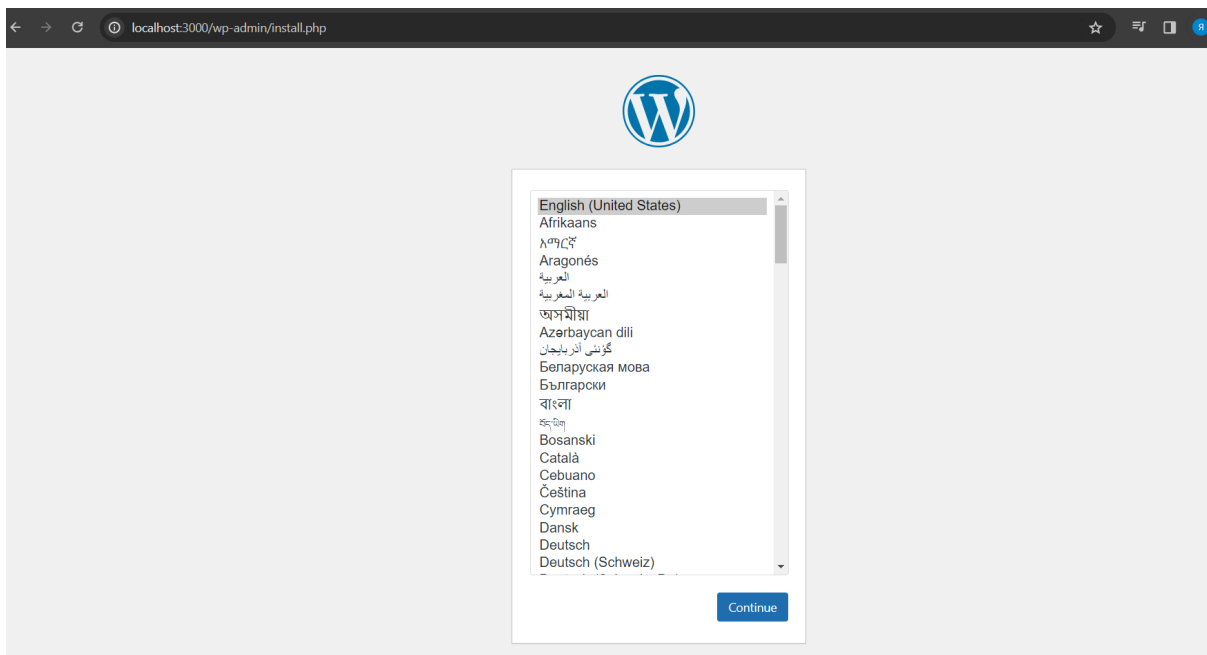
```
PS D:\4sem\for_IGI_LR2\just-enough-series\courses\docker+docker-compose\examples\WordPress> docker-compose up -d
[+] Running 0/2
[+] Running 0/3press_wordpress-network    Created
[+] Running 0/3press_wordpress-network    Created
[+] Running 0/3press_wordpress-network    Created
[+] Running 0/3press_wordpress-network    Created
[+] Running 1/3press_wordpress-network    Created
[+] Running 1/3press_wordpress-network    Created
[+] Running 1/3press_wordpress-network    Created
[+] Running 2/3press_wordpress-network    Created
 - Network wordpress_wordpress-network    Created
 ✓ Container wordpress-db-1              Started
 ✓ Container wordpress-wordpress-1       Started
```

```
PS D:\4sem\for_IGI_LR2\just-enough-series\courses\docker+docker-compose\examples\WordPress> docker-compose ps
NAME                    IMAGE                COMMAND                SERVICE     CREATED          STATUS           PORTS
wordpress-db-1          mysql:5.7            "docker-entrypoint.s…"  db          23 seconds ago   Up 22 seconds    3306/tcp, 33060/tcp
wordpress-wordpress-1   wordpress:6.0.0-php8.0  "docker-entrypoint.s…"  wordpress   23 seconds ago   Up 22 seconds    0.0.0.0:3000->80/tcp
```

5. Настроить сети и тома для обеспечения связи между контейнерами и сохранения данных (исходные данные, логин, пароль и т.д.)

6. Разместите результат в созданный репозиторий в DockerHub

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker tag wordpress:6.0.0-php8.0 yanchikk/lab2docker:wordpress
yanchik@yanchik:/mnt/c/Users/kvace$ docker push yanchikk/lab2docker:wordpress
The push refers to repository [docker.io/yanchikk/lab2docker]
bf6e8536510b: Pushed
4f4a34d7fe70: Pushed
95e4af30fc77: Pushed
b76c56e2f544: Pushed
774d09bdc888: Pushed
2723e9c08080: Pushed
65d512eb6ce2: Pushed
8697fd7c0c31: Pushed
bf60623bf108: Pushed
3af0fe1198ea: Pushed
854b4a4d056f: Pushed
1b80c75f5b15: Pushed
f7a3eb5e3180: Pushed
0cb956e94ed9: Pushed
e9f3f7ef11ab: Pushed
3f2692954abe: Pushed
6a2768aa6892: Pushed
49269d9adf35: Pushed
6fd16b261e9c: Pushed
cefda33a1738: Pushed
08249ce7456a: Pushed
wordpress: digest: sha256:6428490f087d89dabc3b9eebc371e0a73419bbc857a6e145e4f816f8e5994982 size: 4710
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker tag mysql:5.7 yanchikk/lab2docker:mysql
yanchik@yanchik:/mnt/c/Users/kvace$ docker push yanchikk/lab2docker:mysql
The push refers to repository [docker.io/yanchikk/lab2docker]
441e16cac4fe: Mounted from library/mysql
73cb62467b8f: Mounted from library/mysql
337ec6bae222: Mounted from library/mysql
532b66f4569d: Mounted from library/mysql
0d9e9a9ce9e4: Mounted from library/mysql
4555572a6bb2: Mounted from library/mysql
8527ccd6bd85: Mounted from library/mysql
d76a5f910f6b: Mounted from library/mysql
8b2952eb02aa: Mounted from library/mysql
7ff7abf4911b: Mounted from library/mysql
cff044e18624: Mounted from library/mysql
mysql: digest: sha256:4b6c4935195233bc10b617df3cc725a9ddd5a7f10351a7bf573bea0b5ded7649 size: 2618
```

yanchikk / Repositories / lab2docker / General

General   Tags   Builds   Collaborators   Webhooks   Settings

yanchikk/lab2docker 🔒

Updated less than a minute ago

This repository does not have a description ✎

Tags

This repository contains 2 tag(s).

Tag	OS	Type	Pulled	Pushed
● mysql	🐧	Image	---	a minute ago
● wordpress	🐧	Image	---	3 minutes ago

See all

7. Выполните следующие действия с целью изучить особенности сетевого взаимодействия:

· Получить информацию о всех сетях, работающих на текущем хосте и подробности о каждом типе сети

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker network ls
NETWORK ID      NAME      DRIVER     SCOPE
cc88b5dae793    bridge    bridge     local
79fe0cfa12da    host      host       local
eb51b34390af    none      null       local
yanchik@yanchik:/mnt/c/Users/kvace$ docker inspect bridge
[
    {
        "Name": "bridge",
        "Id": "cc88b5dae793245a967525c95d5d99803714dd323781bea05c979226163d5161",
        "Created": "2024-03-14T15:08:30.536872892Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": [
                {
                    "Subnet": "172.17.0.0/16",
                    "Gateway": "172.17.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {},
        "Options": {
            "com.docker.network.bridge.default_bridge": "true",
            "com.docker.network.bridge.enable_icc": "true",
            "com.docker.network.bridge.enable_ip_masquerade": "true",
            "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
            "com.docker.network.bridge.name": "docker0",
            "com.docker.network.driver.mtu": "1500"
        },
        "Labels": {}
    }
]
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker inspect host
[
    {
        "Name": "host",
        "Id": "79fe0cfa12da7360c5f5dea175641069fd18ff3ef39c454efdbd8f7cabd4a9e0",
        "Created": "2024-03-14T15:08:30.505835512Z",
        "Scope": "local",
        "Driver": "host",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": null
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {},
        "Options": {},
        "Labels": {}
    }
]
yanchik@yanchik:/mnt/c/Users/kvace$ docker inspect none
[
    {
        "Name": "none",
        "Id": "eb51b34390af167125712e3bbb8265ef6c0890904263b0be6baf5f85c459d818",
        "Created": "2024-03-14T15:08:30.474232949Z",
        "Scope": "local",
        "Driver": "null",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": null
        },
        "Internal": false,
        "Attachable": false,
```

· Создать свою собственную сеть bridge, проверить, создана ли она, запустить Docker-контейнер в созданной сети, вывести о ней всю информацию(включая IP-адрес контейнера), отключить сеть от контейнера

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker network create bridge_net
a840ed8717dc1a8c1348999d8d91102d00666f4ab332b9b056d2b96217da1170
yanchik@yanchik:/mnt/c/Users/kvace$ docker network ls
NETWORK ID     NAME          DRIVER    SCOPE
cc88b5dae793   bridge        bridge    local
a840ed8717dc   bridge_net    bridge    local
79fe0cfa12da   host          host      local
eb51b34390af   none          null      local
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker run --rm -it -d --net bridge_net nginx:1.23
2dafce37b022fa68a98b3c2384c57765c021678fe74724033eabb3ad36b5ccbf
yanchik@yanchik:/mnt/c/Users/kvace$ docker network inspect bridge_net
[
    {
        "Name": "bridge_net",
        "Id": "a840ed8717dc1a8c1348999d8d91102d00666f4ab332b9b056d2b96217da1170",
        "Created": "2024-03-17T14:53:26.884718577Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": {},
            "Config": [
                {
                    "Subnet": "172.23.0.0/16",
                    "Gateway": "172.23.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {
            "2dafce37b022fa68a98b3c2384c57765c021678fe74724033eabb3ad36b5ccbf": {
                "Name": "zealous_kare",
                "EndpointID": "44c35ad5179e57ba741861d3e2263f5ef0e6303eb19efb51ab0890e2013afa08",
                "MacAddress": "02:42:ac:17:00:02",
                "IPv4Address": "172.23.0.2/16",
                "IPv6Address": ""
```

```
                "IPv6Address": ""
            }
        },
        "Options": {},
        "Labels": {}
    }
]
yanchik@yanchik:/mnt/c/Users/kvace$ docker network disconnect bridge_net zealous_kare
```

· Создать еще одну сеть bridge, вывести о ней всю информацию, запустить в ней три контейнера, подключиться к любому из контейнеров и пропинговать два других из оболочки контейнера, убедиться, что между контейнерами происходит общение по IP-адресу

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker network create bridge_net2
7ad9bc5592f51d508ddcc841e226fb941ba24e033827c9b9a479079224d1cb42
yanchik@yanchik:/mnt/c/Users/kvace$ docker network inspect bridge_net2
[
    {
        "Name": "bridge_net2",
        "Id": "7ad9bc5592f51d508ddcc841e226fb941ba24e033827c9b9a479079224d1cb42",
        "Created": "2024-03-17T15:07:27.674259959Z",
        "Scope": "local",
        "Driver": "bridge",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": {},
            "Config": [
                {
                    "Subnet": "172.25.0.0/16",
                    "Gateway": "172.25.0.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": {},
        "Options": {},
        "Labels": {}
    }
]
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker run --rm -d --name con1 --net bridge_net2 nginx
82405b080f7b266bfa1dffca71c117e77a86b0620b1daf025d0aa1de19cd637e
yanchik@yanchik:/mnt/c/Users/kvace$ docker run --rm -d --name con2 --net bridge_net2 nginx
61d056d1891fd56cb66b3a3c9e7b5992ed6eade9611e09bf7a667227ea028644
yanchik@yanchik:/mnt/c/Users/kvace$ docker run --rm -d --name con3 --net bridge_net2 nginx
e26f5142ce55b077a84997c303db88e4ceab678f070423533c9678dcc0ec441d
yanchik@yanchik:/mnt/c/Users/kvace$ docker ps
CONTAINER ID   IMAGE    COMMAND                 CREATED          STATUS          PORTS     NAMES
e26f5142ce55   nginx    "/docker-entrypoint.…"  8 seconds ago    Up 7 seconds    80/tcp    con3
61d056d1891f   nginx    "/docker-entrypoint.…"  14 seconds ago   Up 13 seconds   80/tcp    con2
82405b080f7b   nginx    "/docker-entrypoint.…"  29 seconds ago   Up 28 seconds   80/tcp    con1
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker exec -it con1 bash
```

```
root@82405b080f7b:/# ping con2
PING con2 (172.25.0.3) 56(84) bytes of data.
64 bytes from con2.bridge_net2 (172.25.0.3): icmp_seq=1 ttl=64 time=1.79 ms
64 bytes from con2.bridge_net2 (172.25.0.3): icmp_seq=2 ttl=64 time=0.133 ms
64 bytes from con2.bridge_net2 (172.25.0.3): icmp_seq=3 ttl=64 time=0.084 ms
64 bytes from con2.bridge_net2 (172.25.0.3): icmp_seq=4 ttl=64 time=0.059 ms
64 bytes from con2.bridge_net2 (172.25.0.3): icmp_seq=5 ttl=64 time=0.073 ms
64 bytes from con2.bridge_net2 (172.25.0.3): icmp_seq=6 ttl=64 time=0.125 ms
64 bytes from con2.bridge_net2 (172.25.0.3): icmp_seq=7 ttl=64 time=0.131 ms
```

```
root@82405b080f7b:/# ping con3
PING con3 (172.25.0.4) 56(84) bytes of data.
64 bytes from con3.bridge_net2 (172.25.0.4): icmp_seq=1 ttl=64 time=0.716 ms
64 bytes from con3.bridge_net2 (172.25.0.4): icmp_seq=2 ttl=64 time=0.078 ms
64 bytes from con3.bridge_net2 (172.25.0.4): icmp_seq=3 ttl=64 time=0.082 ms
64 bytes from con3.bridge_net2 (172.25.0.4): icmp_seq=4 ttl=64 time=0.086 ms
64 bytes from con3.bridge_net2 (172.25.0.4): icmp_seq=5 ttl=64 time=0.083 ms
```

· Создать свою собственную сеть overlay, проверить, создана ли она, вывести о ней всю информацию

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker swarm init
Swarm initialized: current node (yl35e1uo9e8smh0zg10vbdr0w) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-16mmkusojtrp2ebk7dooak0u40v4jq76lupujletbxvxb0e0sv-a3ihhzv4fhhz98872frjum5jv 192.168.65.3:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

yanchik@yanchik:/mnt/c/Users/kvace$ docker network create --driver overlay my_overlay
id0n9ccvj23jo44jom1t3drgt
yanchik@yanchik:/mnt/c/Users/kvace$ docker network ls
NETWORK ID      NAME                DRIVER      SCOPE
cc88b5dae793    bridge              bridge      local
d6a19403cc8c    docker_gwbridge     bridge      local
79fe0cfa12da    host                host        local
yzrtzzsm1dsa    ingress             overlay     swarm
id0n9ccvj23j    my_overlay          overlay     swarm
eb51b34390af    none                null        local
```

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker network inspect my_overlay
[
    {
        "Name": "my_overlay",
        "Id": "id0n9ccvj23jo44jom1t3drgt",
        "Created": "2024-03-17T15:39:23.824542428Z",
        "Scope": "swarm",
        "Driver": "overlay",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": [
                {
                    "Subnet": "10.0.1.0/24",
                    "Gateway": "10.0.1.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": null,
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4097"
        },
        "Labels": null
    }
]
```

· Создать еще одну сеть overlay, проверить, создана ли она, вывести о ней всю информацию, удалить сеть

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker network create --driver overlay my_overlay2
5ajtbloneu1da3cdkeih45vny
yanchik@yanchik:/mnt/c/Users/kvace$ docker network ls
NETWORK ID      NAME              DRIVER     SCOPE
cc88b5dae793    bridge            bridge     local
d6a19403cc8c    docker_gwbridge   bridge     local
79fe0cfa12da    host              host       local
yzrtzzsm1dsa    ingress           overlay    swarm
id0n9ccvj23j    my_overlay        overlay    swarm
5ajtbloneu1d    my_overlay2       overlay    swarm
eb51b34390af    none              null       local
yanchik@yanchik:/mnt/c/Users/kvace$ docker network inspect my_overlay2
[
    {
        "Name": "my_overlay2",
        "Id": "5ajtbloneu1da3cdkeih45vny",
        "Created": "2024-03-17T15:42:08.940672155Z",
        "Scope": "swarm",
        "Driver": "overlay",
        "EnableIPv6": false,
        "IPAM": {
            "Driver": "default",
            "Options": null,
            "Config": [
                {
                    "Subnet": "10.0.2.0/24",
                    "Gateway": "10.0.2.1"
                }
            ]
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
```

```
        },
        "Internal": false,
        "Attachable": false,
        "Ingress": false,
        "ConfigFrom": {
            "Network": ""
        },
        "ConfigOnly": false,
        "Containers": null,
        "Options": {
            "com.docker.network.driver.overlay.vxlanid_list": "4098"
        },
        "Labels": null
    }
]
yanchik@yanchik:/mnt/c/Users/kvace$ docker network rm my_overlay2
my_overlay2
yanchik@yanchik:/mnt/c/Users/kvace$ docker network ls
NETWORK ID     NAME               DRIVER    SCOPE
cc88b5dae793   bridge             bridge    local
d6a19403cc8c   docker_gwbridge    bridge    local
79fe0cfa12da   host               host      local
yzrtzzsm1dsa   ingress            overlay   swarm
id0n9ccvj23j   my_overlay         overlay   swarm
eb51b34390af   none               null      local
```

· Попробовать создать сеть host, сохранить результат в отчет.

```
yanchik@yanchik:/mnt/c/Users/kvace$ docker network create --driver host my_host
Error response from daemon: only one instance of "host" network is allowed
```